

2009

## Vascular Sonography 2009

Nova Southeastern University

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# vascular sonography

COLLEGE OF ALLIED HEALTH AND NURSING

HEALTH PROFESSIONS DIVISION

2009









# nova southeastern university

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## NSU MISSION STATEMENT

Nova Southeastern University is a dynamic, not-for-profit independent institution dedicated to providing high-quality educational programs of distinction from preschool through the professional and doctoral levels, as well as service to the community. Nova Southeastern University prepares students for lifelong learning and leadership roles in business and the professions. It offers academic programs at times convenient to students, employing innovative delivery systems and rich learning resources on campus and at distant sites. The university fosters inquiry, research, and creative professional activity by uniting faculty and students in acquiring and applying knowledge in clinical, community, and professional settings.

Nova Southeastern University, synonymous with dynamic innovation and intellectual challenge, is the largest independent not-for-profit university in the Southeast, and with an enrollment of more than 27,000 students, is the **sixth largest** in the United States. Situated on a beautiful, 300-acre campus in Fort Lauderdale, Florida, the university is experiencing a sustained period of academic growth, fiscal strength, and commitment to the challenges of the 21st century.

In this environment of expansion and stability, the university is capitalizing on its strengths in such areas as academic innovation, comprehensive clinical training, and flexible educational delivery systems.

Founded in 1964 as Nova University, the institution merged with Southeastern University of the Health Sciences in 1994, creating Nova Southeastern University. To date, the institution has approximately **98,000 alumni**. Fully accredited by the Commission on Colleges of the Southern Association of Colleges and Schools, the university awards associate's, bachelor's, master's, educational specialist, and doctoral degrees in a wide range of fields including the health professions, law, business, marine sciences, psychology, social sciences, computer and information sciences, and education.

The university's programs are administered through **15 academic centers** that offer courses at the main campus and at field-based locations throughout Florida; across the nation; and at selected international sites in Europe, Mexico, the Pacific Rim, Central and South America, and the Caribbean.

With a budget of more than \$220 million per year and an upward trend in enrollment, the university will continue to maintain a solid record of academic and fiscal strength and excellence in teaching and community service, while expanding its mission in research and scholarship.



# health professions division

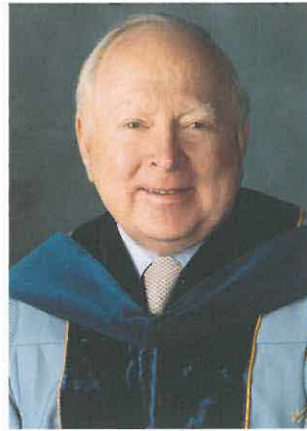
As a student in the Health Professions Division of Nova Southeastern University, you can anticipate a remarkable experience. You will train, study, interact, and share faculty and resources (either campus-based or online) with students from various backgrounds and disciplines. This interdisciplinary approach distinguishes the Health Professions Division as unique and will better prepare you to master your discipline with a sensitivity and understanding of the entire health care system.

The Health Professions Division, with a student body of more than 2,500, is home to six colleges. The College of Osteopathic Medicine, the first one in the southeastern United States, grants the doctor of osteopathic medicine (D.O.) degree. The College of Osteopathic Medicine also awards the master of public health (M.P.H.) and the master of science in biomedical informatics (M.S.BI) degrees. The College of Pharmacy offers the doctor of pharmacy (Pharm.D.) degree to entry-level, international, and postbaccalaureate students. The College of Optometry is the only institution in the state of Florida that awards the doctor of optometry (O.D.) degree as well as the master in clinical vision research (M.S.). The College of Allied Health and Nursing offers an entry-level bachelor of science degree in nursing (B.S.N.), as well as an R.N. to B.S.N. program, a master of science in nursing (M.S.N.) degree, a post-M.S.N. certificate, and a Ph.D. in nursing education. The college offers a physician assistant program that awards the master of medical science (M.M.S.) degree in physician assistant, as well as a master of occupational therapy (M.O.T.) degree and the entry-level doctor of physical therapy (D.P.T.) degree. Doctoral programs are offered in occupational therapy (Ph.D./O.T., Dr.OT), physical therapy (Ph.D./P.T., D.P.T.), and audiology (Au.D.). In addition to these programs, the College of Allied Health and Nursing offers the bachelor of health science (B.H.Sc.), master of health science (M.H.Sc.), and doctor of health science (D.H.Sc.) degrees—open to midlevel clinicians and allied health professionals. There are also courses of study in bachelor of health science—vascular sonography and master of health science—anesthesiologist assistant. The College of Medical Sciences grants the master of biomedical sciences (M.B.S.) degree. In the fall of 1997, the College of Dental Medicine admitted its charter class into the doctor of dental medicine (D.M.D.) program. Now, the college also offers a master of science in dentistry (M.Sc.D.) degree, as well as postgraduate programs in endodontics, oral surgery, orthodontics, pediatric dentistry, periodontics, and prosthodontics.

The Health Professions Division occupies a \$70 million complex, covering 21 acres of the university campus. The division includes eight buildings totaling more than 900,000 square feet of space for classrooms, laboratories, offices, the Health Professions Division Library, an outpatient health center, and a pharmaceutical care center. The adjacent 1,500-vehicle parking garage overlooks the Miami Dolphins Training Camp.



# letter from the chancellor



If you wish to be a leader in the health professions, Nova Southeastern University can help you reach your potential.

In less than two decades, NSU's Health Professions Division has developed into a multidisciplinary academic health center of international stature. Composed of the Colleges of Osteopathic Medicine, Pharmacy, Dental Medicine, Optometry, Allied Health and Nursing, and Medical Sciences, the Health Professions Division has redoubled its commitment to academic excellence, innovation, and community service, while expanding its mission in research and scholarship. Working together, our distinguished faculty members prepare students for an exciting career on tomorrow's dynamic health care team.

A handwritten signature in black ink, reading "Fred Lippman". The signature is written in a cursive, flowing style.

Fred Lippman, R.Ph., Ed.D.  
Chancellor



# department of health science

The Department of Health Science is an interdisciplinary group of programs offering educational opportunities from entry-level undergraduate to postprofessional doctoral education. The Department of Health Science offers working health professionals distance online programs at the bachelor's, master's, and doctoral degree levels, as well as one on-campus, entry-level vascular sonography bachelor's degree program. The department uses innovative, online and on-campus components to achieve its mission of preparing professionals for today's health care market.

The Department of Health Science distance programs provide health care professionals with the tools and leadership skills necessary to make changes and answer difficult challenges at the national and international level. At NSU, health care professionals can expand their knowledge and careers through our innovative programs.

## **BACHELOR OF HEALTH SCIENCE—VASCULAR SONOGRAPHY**

Sonography uses diagnostic ultrasound to image soft tissue structures in the body including abdominal and pelvic organs, fetal development, the heart, and blood vessels. Sonographers specializing in vascular diagnosis are referred to as vascular technologists. Vascular technologists use ultrasound and other diagnostic instruments to detect and assess vascular conditions of arteries and veins. Vascular disorders include carotid artery disease, which may lead to stroke; abdominal vascular diseases such as aneurysms and peripheral arterial disease, which can result in loss of limbs; and venous diseases that can lead to blood clots or pulmonary embolism.

Vascular technologists are an important part of the medical team. They typically work in a hospital or clinical environment under the direction of radiologists, cardiologists, or vascular surgeons. Because of the skills and independence required for the field, vascular technologists are in high demand, and with the aging of Americans, that demand is growing. The Bachelor of Health Science—Vascular Sonography course of study at Nova Southeastern University is designed to train highly skilled and knowledgeable vascular technologists who are prepared to take leadership positions in diagnostic laboratories and clinical research, and in education in the field of vascular sonography.

## **PROGRAM OBJECTIVES**

- to graduate competent vascular technologists who are qualified to perform a variety of standard and specialized diagnostic vascular procedures
- to ensure that graduates are qualified to take and successfully pass the American Registry of Diagnostic Medical Sonography (ARDMS) registry examination in vascular technology
- to prepare graduates for future leadership roles in vascular laboratories and ultrasound departments
- to enhance the student's academic skills for pursuing research studies in the field of vascular sonography

Upon successful completion of the B.H.Sc.—Vascular Sonography course of study, students are eligible to apply for admission to the online Master of Health Science (M.H.Sc.) and later the Doctor of Health Science (D.H.Sc.) programs. Both of these are online degree programs. The M.H.Sc. has no residency requirement; The D.H.Sc. has a requirement for students to complete two one-week summer institutes.



# letter from the dean



The health care marketplace is undergoing a rapid change. The pace of this change has provided a formidable challenge for institutions that provide the educational programs for future health care professionals.

Nova Southeastern University's College of Allied Health and Nursing is committed to providing the highest quality of education to students in a variety of health care disciplines, including occupational therapy, physical therapy, and physician assistant studies, as well as audiology and the nursing programs (entry-level B.S.N., R.N. to B.S.N., M.S.N., post-M.S.N. certificate, and Ph.D.). In addition, the college is committed to a lifelong learning philosophy through the Ph.D. in physical therapy and the Dr.OT and Ph.D. in occupational therapy. We also have the bachelor of health science (B.H.Sc.), master of health science (M.H.Sc.), doctor of health science (D.H.Sc.), and transition doctor of physical therapy (T-D.P.T.) programs, as well as the bachelor of health science—vascular sonography and the master of health science—anesthesiologist assistant specialty courses of study. These degrees for practicing health care professionals are delivered mainly through the use of innovative distance technology.

The College of Allied Health and Nursing is committed to providing health care educational opportunities in formats that meet the needs of prospective students in the community and adequately prepare graduates to assume greater leadership roles in health care delivery systems.

A handwritten signature in black ink that reads "Richard E. Davis". The signature is fluid and cursive.

Richard E. Davis, PA-C, Ed.D.

Dean, College of Allied Health and Nursing





# curriculum overview

Admission to the program requires the completion of a minimum of 30 semester hours of prerequisite general education coursework. The core of the vascular sonography course of study includes 96 semester hours. The entire program requires a total of 126 semester hours for a student to graduate with a Bachelor of Health Science—Vascular Sonography degree.

The first year of the vascular sonography course of study is designed as a combination of on-campus lectures, an ultrasound laboratory practicum, online courses\*, and off-campus integrated clinical training. Students will learn theory in the lecture and online courses, then apply that knowledge in the ultrasound laboratory. The integrated clinical experience relates lecture concepts and lab skills to the clinical setting.

The second year will focus almost entirely on clinical training with more than 1,700 hours of on-site, hands-on experience in a vascular laboratory under the supervision of a registered vascular technologist. Students will be required to fulfill competencies outlined in the clinical handbook. These competencies include all aspects of vascular sonography training and professional duties. In addition, four online courses are required during the senior year.

\* Online courses are provided to students through NSU computer accounts that include email. Students, however, must obtain their own Internet service provider (ISP) and their own computer system (IBM-compatible PC or Apple Macintosh, and a modem.) New students are provided with an orientation and extensive online support on computer and software requirements, online access, online tools and methods, and library resources.

## **PREREQUISITES**

In order to be eligible to graduate with the Bachelor of Health Science—Vascular Sonography degree, a student must have completed 30 semesters hours of prerequisite general education coursework, in addition to the B.H.Sc. curriculum with a resulting minimum total of 126 semester hours. Only courses with a minimum GPA of 2.0 on a 4.0 grading scale will be accepted.



REQUIRED PREREQUISITE GENERAL EDUCATION COURSES

	REQUIRED SEMESTER HOURS
Composition (above Comp 1000).....	3
Social and Behavioral Sciences.....	9
Humanities*.....	6
Human, Biological, and Physical Sciences**.....	9
Math*** (above Math 1000).....	3
Subtotal General Education Courses.....	30

REQUIRED B.H.SC. COURSES

	REQUIRED SEMESTER HOURS
BHS 3110 Health Care Ethics.....	3
BHS 3120 Introduction to Epidemiology.....	3
BHS 3130 Research and Design for Health Care.....	3
BHS 3150 Principles in Leadership.....	3
BHS 3155 Conflict Resolution in Health Care.....	3
BHS 3160 Health Policy.....	3
BHS 4000 Cultural Competency in Health Care.....	3
BHS 4100 Academic and Professional Writing.....	3
BHS 4110 Health Care and Aging.....	3
BSV 3100 Ultrasound Physics I/Lab.....	3
BSV 3200 Ultrasound Physics Review.....	1
BSV 3220 Introduction to Diagnostic Medical Sonography.....	2
BSV 3300 Cerebrovascular Testing/Lab.....	5
BSV 3400 Venous Testing/Lab.....	4
BSV 3500 Peripheral Arterial Testing/Lab.....	4
BSV 3600 Abdominal Vascular Testing/Lab.....	5
BSV 3700 Clinical Preparation and Review.....	4
BSV 4500 Clinical Externship I (16 weeks).....	12
BSV 4600 Clinical Externship II (16 weeks).....	12
BSV 4700 Clinical Externship III (16 weeks).....	12
FME 5105 Basic Life Support.....	1
PHS 4904 Advanced Anatomy for the Health Professions.....	4
Subtotal Core B.H.Sc. courses.....	96

MINIMUM TOTAL DEGREE SEMESTER HOURS REQUIRED ..... 126

\* recommend 3 credits in foreign language  
\*\* strongly recommend 3 credits in anatomy and physiology and physics  
\*\*\* strongly recommend 3 credits in college algebra



# admission requirements

Prospective B.H.Sc. students are selected by the Committee on Admissions through consideration of the overall qualities of the applicant. Individuals with diverse education, work, and life experiences who have demonstrated the capacity to pursue the course of study in vascular sonography will be admitted. Areas of consideration include application content, academic record, letters of evaluation, and personal motivation. Upon receipt of the completed application, the committee on admissions will select applicants for interview. All interview expenses are the responsibility of the applicant.

All applicants for admission must have

1. a minimum of 30 semester credits from a regionally accredited college or university with a minimum cumulative GPA of 2.0 on a 4.0 grading scale

Only courses with a minimum GPA of 2.5 on a 4.0 scale may be considered for possible transfer of credit.

2. evidence of computer skills through coursework or self-study shown prior to the end of the first term

Students may obtain instruction through the NSU Student Microcomputer Laboratory or other training facilities.

It should be noted that many criteria, in addition to academic credentials, play a role in the admission process for the B.H.Sc. program. While the program allows the student to demonstrate academic capability, it does not ensure admission to any professional school. Admission to the B.H.Sc. program will not guarantee admission to any other program of Nova Southeastern University.

Upon receipt of the completed application, fees, credentials and transcripts, the admissions officers and the College of Allied Health and Nursing will review all material for evidence of the proper education, training, and background to enter the B.H.Sc.—vascular sonography course of study.

The university reserves the right to modify any requirements on an individual basis as deemed necessary by the dean of the College of Allied Health and Nursing.

Students are provisionally admitted to a degree-seeking program based on a review of unofficial transcripts or other specific program admission requirements. However, this admission includes a condition that final and official transcripts, documents, and requirements must be received within 90 calendar days from matriculation. If these final and official transcripts, documents, and/or requirements are not received by that time, the student will not be allowed to continue class attendance. Financial aid will not be disbursed to a provisional/conditional student until he or she has been fully admitted as a regular student (all admissions requirements have been approved by the college/program admissions office). Students who have an unpaid balance 30 days from the start of the term will be assessed a \$50 fee.







# application procedures

Applicants for admission must submit or be responsible for submission

1. a completed application form along with a \$50 non-refundable application fee
2. two letters of evaluation from individuals (other than relatives) such as academic advisers, professors, clinical or non-clinical supervisors, community associates
3. official college-, certificate-, and/or diploma-based transcripts from undergraduate and graduate institutions attended, sent directly from the institution to the Enrollment Processing Services (EPS)
4. a student-prepared learning portfolio requesting assessment of prior experiences for academic credit (only for graduates from programs other than those from regionally accredited colleges or universities)
5. copies of national and/or state professional certification, licensure, registration, if applicable
6. evaluation of coursework taken at a foreign institution for U.S. institutional equivalence (if applicable)

Foreign coursework must be evaluated by one of the following services:

**World Education Services, Inc.**

P.O. Box 745  
Old Chelsea Station  
New York, New York 10113-0745  
(212) 966-6311

**Josef Silny & Associates**

7101 SW 102nd Avenue  
Miami, Florida 33173  
Phone: (305) 273-1616 • Fax: (305) 273-1338  
[www.jsilny.com](http://www.jsilny.com)

**Educational Credential Evaluators**

P.O. Box 514070  
Milwaukee, Wisconsin 53203-3470  
(414) 289-3400  
[www.ece.org](http://www.ece.org)

7. a current curriculum vitae

All admissions information should be sent to

**NOVA SOUTHEASTERN UNIVERSITY**

Enrollment Processing Services (EPS)  
College of Allied Health and Nursing  
B.H.Sc. Program Admissions  
3301 College Avenue  
P.O. Box 299000  
Fort Lauderdale, Florida 33329-9905  
Phone: (954) 262-1101 • Fax: (954) 262-2282



The B.H.Sc. Office of Admissions works on a rolling admissions basis. Applications are accepted year round. To ensure that your application receives prompt consideration, you should apply early.

The B.H.Sc. Committee on Admissions will not consider an application until all required fees, credentials, transcripts, and test scores have been received by the EPS.

The university reserves the right to modify any requirements on an individual basis as deemed necessary by the dean of the College of Allied Health and Nursing.

The college reserves the right, and the student (by his or her act of matriculation) concedes to the college the right, to require his or her withdrawal any time the college deems it necessary to safeguard its standards of scholarship, conduct, and compliance with regulations, or for such other reasons as are deemed appropriate.

The dean and B.H.Sc. in vascular sonography program director reserve the right to require the student's withdrawal at any time for the above-mentioned reasons.





# transfer of prerequisite credits

Students who have earned college credits at other regionally accredited colleges or universities can transfer these credits into the B.H.Sc. program. Students should contact a B.H.Sc. admissions counselor to discuss how prior college credits can be used to obtain the B.H.Sc. degree.

An evaluation of transfer credit will be completed prior to the first semester of enrollment, and applicable credit will be transferred based on all final official transcripts received. Students will be advised to take courses based on the official evaluation in their file.

Transfer students must provide final official transcripts from all their previous colleges. Their previous academic





work will then be evaluated. The B.H.Sc.—vascular sonography course of study will transfer a maximum of 30 eligible semester credits (grades of C or better), including credit for CLEP, proficiency exams, and prior experiential learning, toward a degree.

General education courses must have a minimum grade of C (GPA of 2.0 on a 4.0 grading scale) to be accepted for transfer credit. A limited number of D grades may be considered, depending on the total number of credits being transferred and where the D grades are being applied to the curriculum.



## accreditation and nondiscrimination

The Bachelor of Health Science Program is an established program within NSU's College of Allied Health and Nursing. The B.H.Sc. Program was officially approved by the NSU board of trustees in November 2002 on recommendation from the NSU New Program Review Committee.

Nova Southeastern University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097, Telephone number: 404-679-4501) to award associate's, bachelor's, master's, educational specialist, and doctoral degrees. ■ Consistent with all federal and state laws, rules, regulations, and/or local ordinances (e.g., Title VII, Title VI, Title III, Title II, Rehab Act, ADA, and Title IX), it is the policy of Nova Southeastern University not to engage in any discrimination or harassment against any individuals because of race, color, religion or creed, sex, pregnancy status, national or ethnic origin, non-disqualifying disability, age, ancestry, marital status, sexual orientation, unfavorable discharge from the military, veteran status, or political beliefs or affiliations, and to comply with all federal and state nondiscrimination, equal opportunity, and affirmative action laws, orders, and regulations.

This nondiscrimination policy applies to admissions; enrollment; scholarships; loan programs; athletics; employment; and access to, participation in, and treatment in all university centers, programs, and activities. NSU admits students of any race, color, religion or creed, sex, pregnancy status, national or ethnic origin, nondisqualifying disability, age, ancestry, marital status, sexual orientation, unfavorable discharge from the military, veteran status, or political beliefs or affiliations, to all the rights, privileges, programs, and activities generally accorded or made available to students at NSU, and does not discriminate in the administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other school-administered programs.

# curriculum outline

COURSE #	COURSE TITLE	CREDITS HOURS	LECTURE HOURS	LAB HOURS	CLINICAL HOURS	TOTAL HOURS
<b>FALL/WINTER</b>						
PHS 4904	Advanced Anatomy for Health Professions	4	45	30	0	75
BSV 3220	Introduction to Diagnostic Medical Sonography	2	15	30	0	45
BSV 3100	Ultrasound Physics I/Lab	3	30	30	0	60
BHS 3130	Research and Design for Health Care	3	45	0	0	45
BHS 3120	Introduction to Epidemiology	3	45	0	0	45
<b>SUBTOTAL</b>		<b>15</b>				<b>270</b>
<b>SPRING</b>						
BSV 3500	Peripheral Arterial Testing/Lab	5	40	60	0	100
BSV 3400	Venous Testing/Lab	4	30	50	0	80
BHS 3160	Health Policy	3	45	0	0	45
BHS 4100	Academic/Professional Writing	3	45	0	0	45
BHS 4000	Cultural Competency in Health Care	3	45	0	0	45
<b>SUBTOTAL</b>		<b>18</b>				<b>315</b>
<b>SUMMER</b>						
BSV 3600	Abdominal Vascular Testing/Lab	5	40	60	0	100
BSV 3300	Cerebrovascular Testing/Lab	4	30	50	0	80
BSV 3200	Ultrasound Physics Review	1	15	0	0	15
BSV 3700	Clinical Preparation and Review	4	30	0	90	120
FME 5105	Basic Life Support	1	10	10	0	20
<b>SUBTOTAL</b>		<b>15</b>				<b>335</b>
<b>FALL/WINTER</b>						
BSV 4500	Clinical Externship I	12	0	0	540	540
BHS 3110	Health Care Ethics	3	45	0	0	45
BHS 3155	Conflict Resolution	3	45	0	0	45
<b>SUBTOTAL</b>		<b>18</b>				<b>630</b>
<b>SPRING</b>						
BSV 4600	Clinical Externship II	12	0	0	540	540
BHS 3150	Principles of Leadership	3	45	0	0	45
BHS 4110	Health Care and Aging	3	45	0	0	45
<b>SUBTOTAL</b>		<b>18</b>				<b>630</b>
<b>SUMMER</b>						
BSV 4700	Clinical Externship III	12	0	0	540	540
<b>SUBTOTAL</b>		<b>12</b>				<b>540</b>
<b>TOTAL</b>		<b>96</b>	<b>690</b>	<b>320</b>	<b>1,710</b>	<b>2,720</b>





# computer requirements

All students in the department are required to have a computer meeting the minimum requirements listed below.

- Pentium or AMD at 1.00 GHZ or equivalent Macintosh processor
- 256 MB RAM
- video and monitor capable of 1024 X 768 resolution or higher
- CD-ROM drive
- full duplex sound card and speakers
- Internet connection with Internet service provider (DSL, cable, or satellite highly recommended)
- Windows XP or NT or MAC OS
- Microsoft Office 2000 or newer with PowerPoint, Word, and Excel minimum
- printer capability
- Suggested option: laptop computer with wireless Internet capability for use during campus institutes



# distance education support

Students in the B.H.Sc.—vascular sonography course of study are provided with NSU computer accounts including email. Students, however, must obtain their own Internet service providers (ISP) and use their own computer systems (IBM-compatible PC or Apple Macintosh, and a modem). New students receive an orientation and extensive online technical support dealing with online access, online tools and methods, and library resources.

Online interactive learning methods involve Web pages to access course materials, announcements, the electronic library, and other information, plus a range of online activities that facilitate frequent student-professor interaction. Faculty members and students interact via online forums using threaded bulletin boards, chatrooms, and email. Students are able to submit assignments as email attachments, through the use of online forms sent directly to program instructors, fax-to-fax, fax-to-email, and through WebCT. Some online courses may include electronic classroom sessions.

Online students have online access to books, journal articles, microfiche, dissertations, index searches, catalog searches, and reference librarians. The online medical database collection at NSU is extensive and includes access to quality subscription services free of charge to the student.





BSV 3100 Ultrasound Physics I/Lab .....3

This course is designed to introduce the students to the fundamental principles of sound and ultrasound. Students will learn how sound is generated, transmitted, and reflected in soft tissue. In addition, the student will learn the principles of Doppler and color flow physics, artifacts, quality assurance, and the bio-effects and safety of diagnostic ultrasound testing.

FME 5105 Basic Life Support .....1

This American Heart Association-approved course leads to certification upon successful completion.

BHS 3110 Health Care Ethics. ....3

This course is designed to introduce ethical thinking and concepts regarding health care to prepare the student with the essential vocabulary and thought processes to understand, evaluate, and participate in ethical decision making.

BHS 3130 Research and Design for Health Care . . . .3

This course is designed as an introduction to critical analysis of research and medical literature as well as basic research methods. The course includes an introduction to descriptive and inferential statistics and research design. Statistical and research concepts and procedures are combined with an emphasis on practical health care applications.

PHS 4904 Advanced Anatomy for  
Health Professions .....4

This course is a survey of human physiology and includes functional anatomy. It will be presented in an organ system approach and will cover cellular physiology and cardiovascular, renal, respiratory, gastrointestinal, endocrine, reproductive, and nervous systems. The course emphasizes the correlation between anatomy and function, clinical application, and uses of anatomical terminology. Students apply these concepts in the anatomy laboratory setting, using resources such as cadaver dissection, radiographs, MRI, CT, and scans.

BHS 3120 Introduction to Epidemiology .....3

The purpose of this course is to introduce the history and development of epidemiology in relation to public health and disease. Communicable, epidemic, endemic, and social disease will be discussed.

# course descriptions

BSV 3220 Introduction to Diagnostic  
Medical Sonography .....2

This course is designed as an introduction to diagnostic medical ultrasound and will provide the basis for the core courses in specific vascular exam modalities studied in the winter and summer terms. The course will, therefore, be primarily taught in the ultrasound training laboratory. It will favor hands-on participation over lectures and will emphasize understanding of equipment, transducer manipulation, ergonomics, patient rapport, image production, and optimization. This course will be strongly linked to the introduction to ultrasound physics course.

BHS 3150 Principles in Leadership. ....3

This course will provide an overview of numerous leadership theories to prepare the student for a leadership role in health care. The course will critically analyze the differences between leadership and management.

BHS 3155 Conflict Resolution in Health Care .....3

The purpose of this course is to develop an understanding of, and effective methods and strategies for reducing incidences of, workplace conflict including employee-employee conflict, supervisor-subordinate conflict, patient-patient conflict, and patient/client-provider conflict.

BHS 3160 Health Policy .....3

This course provides the student with a broad understanding of policy, how health care is organized and dispensed, and how the practitioner can better work in the system. Topics of discussion include cost control, long-term care, quality control, ethical issues, and insurance.

BSV 3200 Ultrasound Physics Review .....1

Ultrasound physics review is designed to integrate the principles of ultrasound physics with the theoretical and practical lessons provided in the previous and current sessions. Students will learn the fundamentals of image acquisition and optimization as they pertain to ultrasound physics.

BSV 3300 Cerebrovascular Testing/Lab .....4

This course will review the cerebrovascular anatomy and physiology associated with cerebrovascular disease. The student will learn the scanning protocols for extra and intracranial cerebrovascular testing and the diagnostic criteria for assessing disease. The student will also review various diagnostic and treatment options for the patient.

BSV 3400 Venous Testing/Lab .....4

This course will review the venous anatomy and physiology associated with venous disease. The student will learn the scanning protocols for deep and superficial venous testing and the diagnostic criteria for assessing disease. The student will also review various diagnostic and treatment options for the patient.

BSV 3500 Peripheral Arterial Testing/Lab .....5

This course will review the peripheral arterial anatomy and physiology associated with the peripheral arterial system. The student will learn the scanning protocols for upper and lower extremity arterial testing and the diagnostic criteria for assessing disease. The student will also review various diagnostic and treatment options for the patient.

BSV 3600 Abdominal Vascular Testing/Lab .....5

This course will review the abdominal anatomy and physiology associated with visceral vascular disease. The student will learn the scanning protocols for abdominal vascular testing and the diagnostic criteria for assessing disease. The student will also review various diagnostic and treatment options for the patient.

BSV 3700 Clinical Preparation and Review. ....4

Clinical Preparation and Review is a course designed to review general medical anatomy and physiology, terminology, treatment, and surgical and nonsurgical options used in the treatment of patients with vascular disease. It is designed to reinforce the nontechnical/ultrasound components of the training including clinical ethics; diagnostic and treatment options; and other nonimaging skills such as EKG, lab correlation, and patient/sonographer interaction. This course is to ensure the student is well prepared for the clinical experience that follows.

BHS 4000 Cultural Competency in Health Care. ....3

The purpose of this course is to develop competency and better understanding when confronted with issues related to culture, diversity and ethnically based customs, rituals, alternative health care choices, folk medicine, cultural structure and viewpoints, and the practitioner's delivery of health care.



BHS 4100 Academic and Professional Writing . . . . .3

The purpose of this course is to introduce students to the format, content, and thought processes needed for successful academic and professional writing. This is done through the use of the NSU B.H.Sc. form and style manual, as well as introduction to APA and AMA manuals. An overview of proper sentence and paragraph structure, grammar, punctuation usage, formatting, and bibliographic referencing will be discussed.

BHS 4110 Health Care and Aging . . . . .3

This course examines the psychosocial and cultural variations associated with maturing and aging. Topics covered will be an overview of life choices, living wills, and treatment, as well as cultural implications of senior care.

BSV 4500 Clinical Externship I (16 weeks) . . . . . 12

The first 12 weeks of the clinical externship is designed to acquaint the student with the vascular laboratory and health care environment. The student will be expected to transport and/or escort patients into the examination room, prepare patients for procedures, initially observe and later perform normal studies as requested by the preceptor, and prepare studies for interpretation. Students will complete competency-based assessment reports each week for the clinical instructor and clinical coordinator.

BSV 4600 Clinical Externship II (16 weeks) . . . . . 12

This segment of the externship is designed to transition the student into less directly supervised vascular testing and more independent scanning. The student will be expected to complete normal and abnormal studies, write technical impressions on the studies performed, and present and document findings of the study. Students will continue to complete competency-based assessment reports each week for the clinical instructor and clinical coordinator.

BSV 4700 Clinical Externship III (16 weeks) . . . . . 12

The final clinical externship is designed to ensure the student has gained an independent level of competency with both normal and abnormal studies with greater technical expertise and efficiency. The student will be expected to complete abnormal studies completely independently, present cases to the technical and medical director, and write technical impressions on the studies performed. Students will continue to complete competency-based assessment reports each week for the clinical instructor and clinical coordinator.

# b.h.sc. program contact information

## ONLINE:

### WEB SITE:

[www.nova.sonography](http://www.nova.sonography)

### ONLINE APPLICATION

- [www.nova.edu/sonography/](http://www.nova.edu/sonography/)  
Click on "To Apply Online" at the bottom of the page

### EVALUATION FORM DOWNLOAD:

- [www.nova.edu/bhs/admissions/forms/103422BachHlthSciEval.pdf](http://www.nova.edu/bhs/admissions/forms/103422BachHlthSciEval.pdf)

## PHONE:

### VASCULAR SONOGRAPHY ADMISSIONS OFFICE:

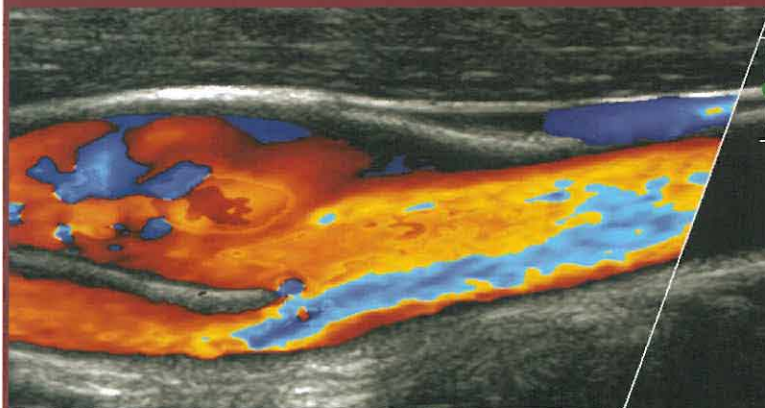
- (954) 262-1111 or  
800-356-0026, ext. 21111/21101

### VASCULAR SONOGRAPHY COURSE OF STUDY OFFICE:

- (954) 262-1964 or  
800-356-0026, ext. 21964

## MAIL:

- Nova Southeastern University  
College of Allied Health and Nursing  
B.H.Sc.—Vascular Sonography  
3200 South University Drive  
Fort Lauderdale, Florida 33328-2018





# tuition and fees

Tuition for 2009–2010 (subject to change by the board of trustees without notice): \$17,225. A Health Professions Division general access fee of \$145 is required each year. An NSU student services fee of \$750 is also required annually.

1. **Acceptance Fee—\$500.** This fee is required to reserve the accepted applicant's place in the entering first-year class, but is not refundable in the event of a withdrawal. It is payable within two weeks of an applicant's acceptance.
2. **Deposit—\$250.** This is due May 15 (August start date), under the same terms as the Acceptance Fee.
3. **Preregistration Fee—\$250.** This is due July 15, under the same terms as the Acceptance Fee.
4. **Sonography Principles and Instrumentation (SPI) Examination—\$200.**

The first semester's tuition and fees, less the \$1,000 previously paid, are due on or before registration day. Tuition for each subsequent semester is due on or before the appropriate registration day. Students will not be admitted until their financial obligations have been met. The Financial Aid Department and the Health Science Department are eager to assist you in exploring all the grants and loans currently available for sonography students. Please do not hesitate to ask if you need assistance.

Each student is required to carry adequate personal medical and hospital insurance. Students may avail themselves of the hospitalization insurance plan obtainable through the university.

The primary financial responsibility for a student's education rests with the student and his or her family, but economic circumstances for some families may make it necessary for the student to obtain assistance from other sources.

The purpose of the Student Financial Aid Program at Nova Southeastern University is to help as many qualified students as possible to complete their health professions education. Various loans, scholarships, and grants are available to qualified students to help ease the high cost of a health professions education. These financial assistance programs are described in a separate university publication, *The NSU Guide to Student Financial Assistance*.

For a copy or information, contact

**NOVA SOUTHEASTERN UNIVERSITY**  
Department of Student Financial Aid  
3301 College Avenue  
Fort Lauderdale, Florida 33314-7796  
(954) 262-3380 • 800-806-3680

# financial aid

## NSU COLLEGE OF ALLIED HEALTH AND NURSING MISSION STATEMENT

In the spirit of improving and maintaining optimum health conditions in the community, the College of Allied Health and Nursing prepares professionals with the skills necessary for the diagnosis, treatment, and prevention of diseases; for the support of the populace in maintaining proper health and safety; for the management of rehabilitative processes; and for the education of the community in understanding the interdependency of health, environment, social and political factors. The College of Allied Health and Nursing endeavors to train both graduate and undergraduate professionals in the arts of improving the quality of life in the community.



## terry administration building

### FIRST FLOOR

- Student Affairs
- Admissions
- Financial Aid
- HPD Cafeteria

### SECOND FLOOR

- College of Allied Health and Nursing
  - Audiology Department
  - Health Sciences Department
  - Occupational Therapy Department
  - Physical Therapy Department
  - Physician Assistant Department

### THIRD FLOOR

- College of Medical Sciences
- College of Pharmacy

### FOURTH FLOOR

- College of Osteopathic Medicine
- College of Optometry

### FIFTH FLOOR

- HPD Administration
- Public Health Program
- Nursing Department
- Area Health Education Center

## assembly building

- Finkelstein Auditorium (125 seats)
- Jonas Auditorium (125 seats)
- Melnick Auditorium (125 seats)
- Resnick Auditorium (125 seats)
- Terry Auditorium (125 seats)
- Auditoria A, B, and C (125 seats each)
- Robert A. Steele Auditorium (500 seats)
- Hull Auditorium (250 seats)
- Seminar Rooms

## library/laboratory building

### FIRST FLOOR

- Drug Information Center
- "Harvey" Cardiac Patient Simulation Room
- HPD Library
- Student Computer Laboratory
- Patient Simulation Center

### SECOND FLOOR

- Occupational Therapy Laboratories
- Optometry Laboratories
- Physical Therapy Laboratory
- Student Lounge
- FOMA Osteopathic Manipulative Medicine Laboratory

### THIRD FLOOR

- Basic Science Laboratories
- Gross Anatomy Laboratories
- Microscopy Laboratory
- Research Laboratories
- Moran Pharmacy Practice Laboratory
- Pharmacokinetics Laboratory
- Pharmaceuticals Laboratory

## pharmacy and pharmaceutical care center

## sanford l. ziff health care center

### FIRST FLOOR

- Family Medicine
- Occupational Therapy
- Pediatrics
- Dermatology
- Physical Therapy
- Radiology

### SECOND FLOOR

- Optometry Clinics
- Optometry Dispensary

### THIRD FLOOR

- Business Offices
- Specialty Clinics
  - Cardiology
  - Internal Medicine
  - Osteopathic Manipulative Medicine
  - Pulmonary Medicine
- Emergency Medicine Training Center



## dental medicine building

### FIRST FLOOR

- Oral Medicine and Radiology Clinic
- Oral Surgery Clinic
- Student Dental Clinic
- Clinic Support Laboratory
- Predoctoral and Postgraduate Oral Surgery

### SECOND FLOOR

- Faculty Practice
- Simulation Lab
- Postgraduate Endodontics
- Postgraduate Orthodontics
- Postgraduate Pediatric Dentistry
- Postgraduate Periodontics
- Postgraduate Prosthodontics

### THIRD FLOOR

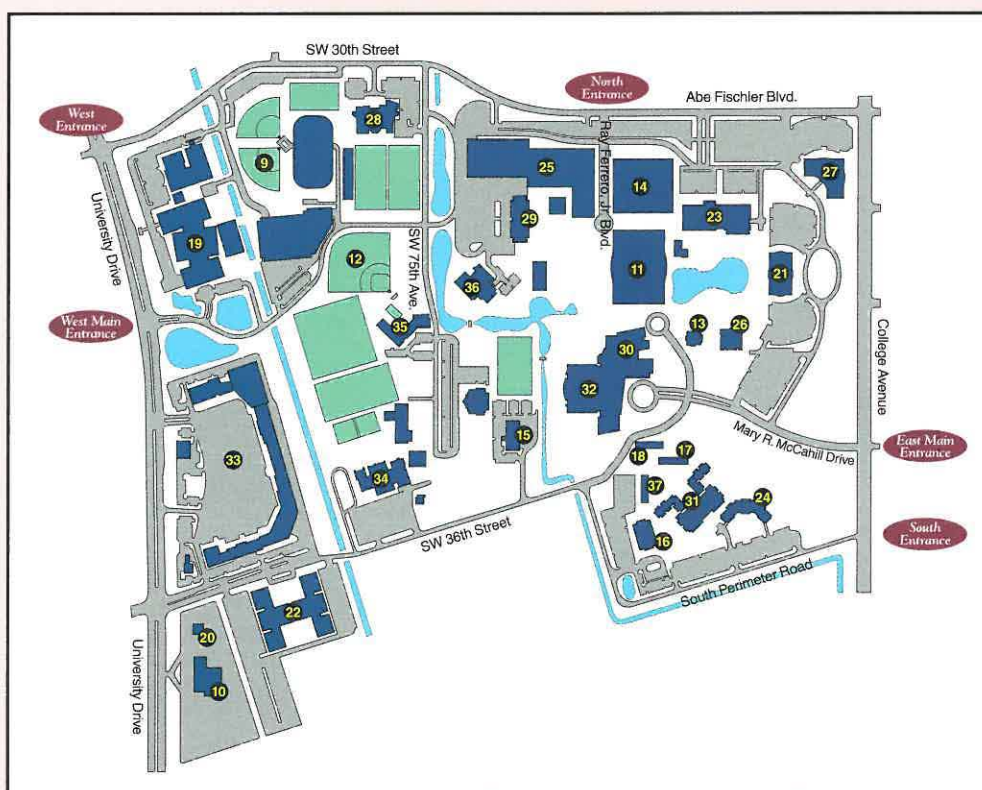
- Auditorium
- Seminar Rooms
- Central Sterilization Area
- Dispensing
- Faculty Offices
- Student Dental Supply Depot

## parking garage

## hpd assembly building

- Auditorium
- Computer Science Laboratory
- Seminar Rooms
- Physical Assessment Laboratory
- Compliance Office

A.D. Griffin Sports Complex with Lighted Softball Fields	9
Administrative Services Center	10
Alvin Sherman Library, Research, and Information Technology Center	11
Athletics Field	12
Athletics and Student Affairs Building	13
Carl DeSantis Building	14
Central Services Building	15
Cultural Living Center	16
Farquhar Residence Hall	17
Founders Residence Hall	18
Health Professions Division Complex	19
Hearing and Balance Clinic	20
Horvitz Administration Building	21
Jim & Jan Moran Family Center Village	22
Leo Goodwin Sr. Hall	23
Leo Goodwin Sr. Residence Hall	24
Library and Main Student Parking Garage	25
Mailman-Hollywood Building	26
Maltz Psychology Building	27
Miami Dolphins Training Facility	28
Parker Building	29
Rosenthal Student Center	30
The Commons	31
University Center	32
University Park Plaza	33
University School Lower School	34
University School Middle School (Dauer Building)	35
University School Upper School (Sonken Building)	36
Vettel Residence Hall	37







Health Professions Division  
3200 South University Drive  
Fort Lauderdale, Florida 33328-2018

Office of Admissions  
(954) 262-1101 • 800-356-0026, ext. 21101  
[www.nova.edu](http://www.nova.edu)